



Recombinant Human TNF- α

Catalog Number: GR104218

Background

TNF- α , the prototypical member of the TNF protein superfamily, is a homotrimeric type-II membrane protein (1, 2). Membrane bound TNF- α is cleaved by the metalloprotease TACE/ADAM17 to generate a soluble homotrimer (2). Both membrane and soluble forms of TNF- α are biologically active. TNF- α is produced primarily by macrophages, but it is produced also by a broad variety of cell types including lymphoid cells, mast cells, endothelial cells, cardiac myocytes, adipose tissue, fibroblasts, and neuronal tissue (1). Cellular response to TNF- α is mediated through interaction with receptors TNF-R1 and TNF-R2 and results in activation of pathways that favor both cell survival and apoptosis depending on the cell type and biological context. Activation of kinase pathways (including JNK, ERK (p44/42), p38 MAPK and NF- κ B) promotes the survival of cells, while TNF- α mediated activation of caspase-8 leads to programmed cell death (1,2). TNF- α plays a key regulatory role in inflammation and host defense against bacterial infection, notably *Mycobacterium tuberculosis* (3). TNF- α causes many of the clinical problems associated with autoimmune disorders such as rheumatoid arthritis, ankylosing spondylitis, inflammatory bowel disease, psoriasis, hidradenitis suppurativa and refractory asthma. The role of TNF- α in autoimmunity is underscored by blocking TNF- α action to treat rheumatoid arthritis and Crohn's disease (1, 2, 4).

References

1. Aggarwal, B.B. (2003) *Nat Rev Immunol* 3, 745-56.
2. Hehlhans, T. and Pfeffer, K. (2005) *Immunology* 115, 1-20.
3. Lin, P.L. et al. (2007) *J Invest Dermatol Symp Proc* 12, 22-5.
4. Brennan, F.M. and McInnes, I.B. (2008) *J Clin Invest* 118, 3537-45.



Recombinant Human TNF- α

Catalog Number: GR104218

Description

Size: 5 μ g

Accession #: NP_000585.2

Sources: expressed in *E. coli*.

Composition: Leu78-Lys233

Molecular weight: 17 kDa

Activity: Measured by its ability to inhibit TNF- α mediated cytotoxicity in the L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. Matthews N and Neale ML (1987) in Lymphokines and Interferons, A practical Approach. Clemens MJ et al. (eds): IRL Press. 221.

The ED50 for this effect is 0.05-0.1 μ g/ml in the presence of 0.25 ng/ml of rcTNF- α .

Endotoxin level: <0.01 EU per 1 μ g of the protein by the LAL method.

Purity: > 95%, by SDS-PAGE under reducing conditions and visualized by silver staining.

Formulation:: Reconstituted at 50 μ g/ml in sterile PBS and store at -20°C ~ -70°C for up to 3 months.

Shipping and storage: The product is shipped at 4°C with ice pad. Upon receipt, store it immediately at -20°C to avoid loss of activity and use it in 3 months.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

**FOR LABORATORY RESEARCH USE ONLY
NOT FOR USE IN HUMANS AND ANIMALS**